

**1.0 DESCRIPTION**

The self-lubricating expansion bearing assemblies each consist of an oilless self-lubricating copper alloy plate, a sole plate, a sliding plate with keeper bars, a masonry plate, any necessary fill plates, a bearing pad, an anchor bolt assembly which includes anchor bolts, nuts, and washers, pipe sleeves, a closure plate, grout, various sizes of standard pipe, and any other necessary material as detailed on the plans. These bearing assemblies are located at the expansion ends of applicable spans as shown on the plans.

**2.0 REQUIREMENTS**

Use self-lubricating copper alloy bearing plates that are an approved article of standard production by an established manufacturer of such equipment installed in accordance with the manufacturer's recommendations and conforming to the following requirements:

- Copper alloy conforming to AASHTO M107 Alloy 911 or AASHTO M108 Alloy 510.
- Lubricant of the solid type and consisting of graphite, metallic substances having lubricating properties and a lubricating binder. Do not use materials without lubricating qualities or that promote chemical or electrolytic reactions. Use lubricant that is integrally molded and compressed into the lubrication recesses to form a dense, non-plastic lubricant.
- Recesses arranged in a geometric pattern so that successive rows overlap in the direction of motion and the distance between extremities of recesses is closer in the direction of motion than that perpendicular to motion. Lubricate the entire bearing area of all surfaces that have provision for motion by means of these lubricant filled recesses. Provide a total area of these recesses between 25% and 35% of the total bearing area of the plate.
- Furnish bearing plates in sizes specified on the drawings. Machine finish the bearing surfaces and make sure that the surface roughness does not exceed 125 micro inches (3.18 microns) when measured in accordance with ASA Standard B46.1-1955. Also finish the bearing surfaces of the opposing steel plates as above. Align the tool marks in the direction of motion. Finish the bearing surfaces so that all machine surfaces are flat within 0.0005 inch per inch (0.0127 mm per 25 mm) of length and width.
- For mating curved surfaces of steel and copper alloy, the maximum positive tolerance for the concave surface is 0.010 inch (0.25 mm) and the maximum negative tolerance for the convex surface is 0.010 inch (0.25 mm).
- The coefficient of friction between the copper alloy self-lubricating plates and the steel plates in contact with them does not exceed 0.10 when subjected to the designed unit loading and at twice the designed unit loading.

### **3.0 BASIS OF PAYMENT**

Payment for the bearing assemblies will be at the contract lump sum price bid for “Self-lubricating Expansion Bearing Assemblies”. Such lump sum price will be full compensation for all materials, tools, equipment, labor and incidentals necessary to furnish and install the self-lubricating bearing assemblies.

Payment for the Fixed Bearing Assemblies as shown on plans will be included in the lump sum price bid for “Structural Steel”.